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ABSTRACT

An analysis of survey responses from a sample of radiological technicians on competency characteristics for their occupation is presented in this document. (Radiological technician is one of seventeen occupation groups included in this research.) The competencies are reported in five categories: (1) those competencies selected by the respondents from a list of 720 health occupations competencies; (2) the percentage rate which respondents reported practicing the competency item; (3) type of competency (indicated as the performance of a physical skill or action, or an understanding or mental comprehension); (4) use frequency (daily, weekly, monthly); and (5) training needed to achieve proficiency in that competency (formal instruction, demonstration, on-the-job). (The final report of the survey is available as CE 018 899. Survey results for the other occupational groups are also available--see CE 018 900-916.) (JH)

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Common Intra-Cluster Competencies Needed in Selected Occupational Clusters

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Forward

This volume contains detailed competency characteristics collected in the vocational education research project entitled "Common Intracluster Competencies Needed in Selected Occupational Clusters - Health Occupations".

The information herein summarizes the responses of one of the seventeen occupational groups included in the research. The study included 720 individual competency items, both skills and understandings, which were presented to a sample of health occupation employees in Iowa and/or the central states area.

The data included in this volume summarizes the responses by those surveyed in the occupation listed on the cover.

Description of the Data

Essentially five competency characteristics are presented on the pages that follow. The total number of respondents to the survey is indicated following the table heading in the format N=__. Those characteristics include:

1. Competencies reported by respondents -

   The first column is a list of the competencies reported by respondents. Each competency carries the item number from the comprehensive listing utilized in the research process and as presented in the main report. Competencies not reported by respondents were not included to preserve space.

2. Practice rate -

The second column presents the percentage rate which respondents reported practicing the competency item. Practice rates of fifteen percent or less are indicated by an asterisk (*) and lack additional characteristic percentage computations because of their small cell size.

The remaining three competency characteristics represent responses of those who indicated that they practiced the competency.

3. Type of competency -

Columns three and four indicate the percentage of the type of competency which respondents indicated characterized the nature of their activity. An "S" indicates the performance of a physical skill or physical action, while a "U" reflects that an understanding or mental comprehension only was needed for the competency. (See the Glossary in the main report for working definitions of skill and understanding).

4. Use frequency -

Distribution of the percentage of frequency which competencies were practiced, for those who reported possession of them, is presented in columns five, six, and seven. "D" in column five represents a competency exercised daily, "W" in column six represents a weekly frequency, while "M" in column seven reflects monthly or less frequent practice.

5. Training needed -

The final three columns summarize the percentage distribution of the nature of training which respondents felt was necessary to achieve proficiency in the competency. The "I" in column eight represents formal instruction, such as would be presented in an academic setting. A "D" (column nine) indicates that a demonstration of how to perform the competency is all that is needed to achieve proficiency, while "E" in column ten indicates that on-the-job exposure is adequate for developing the competency.

Rounded, whole-number percent figures were used in the preparation of this report, since the findings were considered to represent trends more than finite characteristics. Multiple column computations were forced to total 100 percent by the rounding process except for those items where equal numbers in each of three columns were reported. In those cases the total of 99 percent reflects all responses reported.

Using the Data

Possible uses and applications of the data are presented in the main body of the research report. The material presented in this supplementary volume will be of most value to those concerned solely with the occupational field which is treated herein.

Competency Characteristics Reported by RADIOLOGICAL TECHNICIAN (by percent) N=27

Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
1. Seek guidance to improve performance in patient care.	20	0	100	0	50	50	0	50	50
2. Participate in/conduct demonstrations of procedures and equipment (in-service).	79	91	9	27	9	64	45	36	19
3. Orient new personnel to unit facilities, routines, and other personnel.	30	100	0	33	0	67	0	67	33
4. Advise health professionals on the technicalities and procedures involved in operating special equipment.	50	57	43	14	29	57	57	29	14
5. Practice established routines and policies of the health care facility.	30	100	0	100	0	0	33	67	0
6. Supervise subordinates within the health care facility.	57	25	75	100	0	0	50	0	50
7. Give "on the job" instruction.	30	67	33	33	0	67	33	33	33
8. Advise staff concerning medical jurisprudence.	29	0	100	33	0	67	50	0	50
10. Establish work priorities and schedule work assignments.	57	50	50	75	13	12	25	25	50
11. Identify operational deficiencies and recommend corrections.	30	67	33	67	0	33	0	67	33

	Competency	Practice Rate	Type		Use Frequency			Training Needed		
			S	U	D	W	M	I	D	E
12.	Evaluate subordinate employee performance.	57	37	63	25	37	38	14	0	86
14.	Consult with health professionals on purchasing/ constructing/using special appliances.	57	25	75	0	0	100	29	0	71
15.	Interview/evaluate/hire prospective personnel.	*								
16.	Maintain standards of employees' personal hygiene as related to job performance.	43	33	67	50	33	17	17	17	66
17.	Insure that all subordinates are on duty.	*								
18.	Attend and participate in staff meetings.	50	14	86	0	14	86	43	0	57
19.	Develop policies and establish departmental procedures.	20	0	100	50	0	50	0	0	100
20.	Inform personnel of new or changed policies and procedures.	43	0	100	17	17	66	17	33	50
21.	Provide liaison between doctor and other professional associates.	20	0	100	100	0	0	50	0	50
22.	Review and approve employee's payroll time and salary.	21	0	100	0	0	100	67	0	33
23.	Coordinate work schedules with other departments.	20	0	100	100	0	0	0	0	100

	Competency	Practice Rate	Type		Use Frequency			Training Needed		
			S	U	D	W	M	I	D	E
24.	Teach special procedures to department members/ students/health care professionals.	57	75	25	37	13	50	50	0	50
25.	Teach safety techniques as needed.	20	100	0	50	0	50	50	0	50
27.	Inform personnel of potential hazards in their working area.	20	100	0	0	50	50	100	0	0
28.	Demonstrate tact in giving and withholding information concerning patient care/operations of the health care facility.	57	25	75	75	0	25	50	25	25
29.	Represent the department and facility at community meetings.	*								
30.	Attend meetings and participate in community activities related to doctor's practice.	29	25	75	0	0	100	25	25	50
32.	Assist in the orientation of volunteers, students, and new staff.	79	45	55	45	0	55	55	36	9
34.	Train volunteers in specific techniques.	21	33	67	0	0	100	0	33	67
36.	Conduct tours of facilities.	71	50	50	0	0	100	22	0	78
40.	Assist patient in and out of bed.	50	100	0	86	0	14	29	42	29
42.	Transport patient on stretcher/wheelchair.	64	89	11	78	0	22	33	11	56

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed F
44.	Assist patient in use of commode, urinal or bedpan.	21	100	0	33	33	33	33	0	67
46.	Assist in resolving patient complaints.	36	0	100	40	40	20	20	20	60
47.	Obtain signature on various patient/family consent forms.	*								
51.	Obtain information from patient/family.	20	100	0	100	0	0	50	0	50
52.	Orient patient/family to health care facility.	*								
53.	Receive patient, explain tests and procedures to them and ally their fears.	20	100	0	100	0	0	100	0	0
54.	Attend to patient's comfort before, during, and after examination/tests/treatment.	79	100	0	100	0	0	9	36	55
58.	Assist patient in planning for health care facility.	*								
60.	Explain therapy procedures in lay terms.	21	67	33	33	33	33	33	67	0
61.	Explain follow-up services to patient.	*								
62.	Help patient develop positive attitudes toward their illness/confinement.	21	0	100	33	33	33	33	0	67

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
63.	Assist in establishing a comfortable relationship between the patient and the health care professional.	20	100	0	100	0	0	100	0	0
64.	Observe negative/positive physical and emotional responses to treatments, medications, nursing care, etc.	36	20	80	80	0	20	60	0	40
65.	Interpret patient's signs, symptoms, behavior, etc.	20	100	0	100	0	0	100	0	0
67.	Observe patient's general physical condition, appearance, and behavior.	20	100	0	100	0	0	100	0	0
69.	Record and chart vital signs, height, weight, and/or other conditions as directed by health care professional.	*								
70.	Account for isotope licensing/procurement.	*								
72.	Maintain a use record on special equipment.	21	33	67	33	0	67	0	0	100
74.	Maintain appointment control.	21	100	0	100	0	0	0	67	33
77.	Schedule patient treatment sessions.	40	75	25	100	0	0	25	50	25
78.	Maintain record of all reque for patient information.	29	50	50	75	25	0	25	25	50

	Competency	Practice Rate	Type		Use Frequency			Training Needed		
			S	U	D	W	M	I	D	E
79.	Obtain charts of patients for whom information is requested.	20	100	0	100	0	0	0	50	50
80.	Prepare patient record folder (chart).	36	80	20	80	20	0	20	60	20
82.	Sort/file/organize documents, certificates, patient records, etc.	21	67	33	67	33	0	0	33	67
88.	Obtain physician's record of medical information and signature on certificate.	29	50	50	75	25	0	0	0	100
89.	Process mail and correspondence (both incoming and outgoing).	20	50	50	0	0	50	0	100	0
92.	Prepare requisitions.	43	83	17	83	17	0	0	50	50
93.	Handle telephone calls.	70	71	29	100	0	0	40	0	60
95.	Prepare correspondence/report/summary (not forms).	20	100	0	50	50	0	0	100	0
97.	Mount, label, and file radiographs.	70	100	0	75	0	25	0	50	50
98.	Maintain a patient recall system.	29	75	25	75	25	0	0	50	50
102.	Check/maintain charting of treatments and medications, procedures, orders, observations.	*								
103.	Maintain personal information card index on each patient.	50	100	0	67	0	33	0	33	67

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
104.	Gather data to complete reports for government agencies.	*								
106.	Prepare and replenish supplies in physician's kit.	29	75	25	50	25	25	0	0	100
107.	Operate office business machines.	40	100	0	100	0	0	33	33	33
108.	Initiate and maintain a medical record file for patients.	21	67	33	67	0	33	0	33	67
111.	Maintain catalogs of supplies and equipment.	20	0	100	0	50	50	0	0	100
112.	Prepare statistical reports in regard to patient visits and procedures.	29	75	25	75	0	25	25	0	75
113.	Maintain a fee schedule for services.	40	50	50	67	0	33	0	33	67
115.	Follow established procedure in filing incident reports.	40	100	0	50	50	0	25	50	25
116.	Process loans of X-ray films.	71	90	10	73	0	27	0	44	56
117.	Maintain radiology work record for statistical purposes.	50	80	20	100	0	0	0	67	33
118.	Receive and record physician's verbal orders.	43	83	17	83	0	17	17	33	50
119.	Transcribe physician's orders.	70	86	14	50	50	0	50	25	25

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
120.	Follow established procedures for processing authorization/accident report forms (autopsy, surgery, diagnostic tests, discharge forms).	*								
121.	Apply restraints.	30	100	0	0	100	0	0	100	0
122.	Adjust side rails and height of bed.	29	100	0	25	25	50	0	50	50
123.	Open sterile packages and packs.	70	100	0	50	25	25	50	50	0
127.	Use footboards.	40	100	0	50	50	0	0	100	0
128.	Turn and place patient in correct body alignment.	21	100	0	100	0	0	33	67	0
137.	Irrigate rectum (enema).	40	100	0	67	33	0	33	33	33
142.	Chemically prepare short-life isotopes (direct methods, and eluting a prepared column).	*								
144.	Prepare oral dose using measure for manufacturers bottle by mixing and diluting.	*								
145.	Prepare injections using measured/sterilized dose.	70	100	0	100	0	0	75	0	25
148.	Accumulate and process data for doctor's interpretation.	43	67	33	66	17	17	33	0	67

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
150.	Make simple dose calculations for tracer examinations.	*								
152.	Examine scan test results for general credibility.	*								
154.	Select proper accessories for radiographic techniques.	86	67	33	75	0	25	75	0	25
155.	Improvise or modify equipment for special requirements.	*								
160.	Perform preliminary interpretations of observations for doctor.	*								
162.	Operate an autofluorescope for static/fast/slow dynamic studies.	*								
163.	Know and apply basic first aid techniques including artificial respiration and cardiac resuscitation.	60	100	0	33	0	67	67	0	33
164.	Monitor radiation levels in compliance with hospital regulations.	50	71	29	63	0	37	63	0	37
171.	Set up and assist with the use of various fracture tables.	40	100	0	75	25	0	50	0	50

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
175.	Be familiar with various orthopaedic operative procedures and the equipment these procedures require.	40	75	25	33	67	0	67	33	0
180.	Take and process X-rays.	100	86	14	100	0	0	86	0	14
181.	Practice patient and operatory safety measures and radiation.	60	100	0	83	17	0	67	0	33
182.	Administer intravenous fluids, blood, etc.	*								
184.	Adjust voltage, amperage, and timer of X-ray machine.	93	85	15	100	0	0	69	0	31
232.	Notify physicians concerning incomplete records.	*								
233.	Transcribe from recording machines using magnetic belts or recorded discs.	20	100	0	100	0	0	100	0	0
234.	Type information onto various forms.	43	100	0	83	0	17	0	17	83
235.	Change discs, belts, or tapes on recording equipment.	20	100	0	100	0	0	100	0	0
404.	Exercise precautions in administering and handling potentially dangerous agents.	29	100	0	75	0	25	50	25	25
411.	Connect catheters and tubing to drainage.	50	80	20	50	33	17	50	50	0

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
415.	Apply hot water bottle, hot and cold packs, hot and cold soaks, hot and cold compresses, cold ice bag.	50	80	20	100	0	0	50	50	0
421.	Reveiw scheduled appointments with doctor.	60	33	67	100	0	0	0	33	67
452.	Describe the nature of patient's illness or injury.	21	33	67	67	0	33	0	0	100
586.	Review patient's clinical history.	36	40	60	100	0	0	0	20	80
587.	Load and unload film units.	70	100	0	100	0	0	86	14	0
588.	Affix lead shield to cassette for identification.	79	100	0	90	0	10	9	36	55
589.	Prepare contrast media such as barium sulphate.	70	100	0	71	0	29	86	14	0
590.	Administer radiopaque preparations.	71	100	0	80	10	10	60	10	30
591.	Take X-rays (dental/abdominal/spinal/chest/etc.).	70	100	0	100	0	0	100	0	0
592.	Take X-rays of ribs and sternum, extremities.	100	71	29	100	0	0	71	7	22
593.	Operate image itensifier fluroscopic units.	70	100	0	71	29	0	100	0	0
594.	Operate mobile X-ray units.	86	92	8	84	0	16	67	8	25
595.	Assist with cerebral angiograms, bronchiograms, arthrograms, hysterosalpingograms.	70	100	0	57	29	14	100	0	0

	Competency	Practice Rate	Type		Use Frequency			Training Needed		
			S	U	D	W	M	I	D	E
596.	Assist with laminograms, mammograms, chlogiograms, intravenous pyelograms and Ivs.	79	91	9	91	9	0	82	9	9
597.	Assist with sialograms, scanograms, pneumoencephalograms, urographic studies.	70	100	0	67	33	0	100	0	0
598.	Assist with upper GI series, stereoscopic X-rays ventricueograms.	79	91	9	90	10	0	75	13	12
599.	Assist with X-rays for cholecystographic studies.	70	100	0	57	43	0	100	0	0
600.	Assist with X-rays for contrast studies of large bowel or colon and esophagus.	79	91	9	91	0	9	73	9	18
601.	Assist with X-rays of small intestine, pelvimetric studies.	70	100	0	71	29	0	100	0	0
602.	Assist with fistula or sinus tract X-rays.	86	92	8	75	13	12	67	8	25
603.	Develop technical procedures for special radiology examination.	70	100	0	71	29	0	71	29	0
608.	Administer oxygen by mask, tent, nasal devices, incubator.	21	100	0	50	0	50	33	33	33
610.	Perform artificial respiration.	*								
619.	Use hypothermic techniques.	20	100	0	0	0	100	100	0	0

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
621.	Mix and measure drug doses.	20	100	0	100	0	0	100	0	0
622.	Recognize expected reactions to treatment.	36	60	40	50	25	25	40	20	40
623.	Recognize complications of adverse reactions to treatments.	21	100	0	100	0	0	100	0	0
624.	Minimize hazards throughout the health care facility.	21	67	33	50	0	50	33	33	33
625.	Arrange equipment for convenient and safe use.	30	100	0	100	0	0	0	0	100
627.	Accurately measure body temperature and read clinical thermometer for oral, rectal and axillary temperature.	30	100	0	0	100	0	0	100	0
628.	Operate and adjust examining tables.	*								
634.	Knows routine for fire in patient area and demonstrates knowledge of procedures for securing the building and reassuring and aiding patients.	50	29	71	29	0	71	0	43	57
635.	Has an understanding of fire prevention and control.	70	29	71	25	0	75	50	25	25
645.	Immediately report deviations of patient's vital signs from the normal.	60	83	17	100	0	0	100	0	0
646.	Follow procedures in care of isolated patients.	36	40	60	50	25	25	20	60	20

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
668.	Administer medications/isotopes to patients by injection/orally.	*								
669.	Perform superficial/specialized examination of patients.	*								
670.	Abstract simple data from patient's chart.	21	100	0	100	0	0	0	0	100
671.	Position, gown/drape patient.	50	100	0	100	0	0	67	33	0
672.	Prep patient using correct procedures and solutions.	21	100	0	100	0	0	0	33	67
685.	Dispense medications when ordered by health professional.	20	100	0	0	100	0	0	100	0
688.	Deliver/remove equipment/supplies from contaminated room.	*								
689.	Dispose of contaminated materials and equipment.	20	100	0	50	50	0	0	100	0
690.	Change soiled linen and clothes.	43	100	0	100	0	0	0	17	83
691.	Clean patient unit furniture.	40	100	0	75	25	0	0	100	0
692.	Clean and maintain service area and equipment, within area of responsibility.	71	100	0	80	10	10	10	40	50

	Competency	Practice Rate	Type S	Type U	Use Frequency D	Use Frequency W	Use Frequency M	Training Needed I	Training Needed D	Training Needed E
693.	Order/inventory and store equipment and supplies.	40	100	0	50	50	0	0	50	50
694.	Calibrate nuclear medical instruments.	29	100	0	25	0	75	25	0	75
695.	Verify performance of instruments/devices against manufacturer's specifications.	60	50	50	0	50	50	0	50	50
696.	Determine if equipment needs repair.	64	55	45	44	11	45	22	11	67
697.	Schedule/perform maintenance on equipment.	40	100	0	0	50	50	0	50	50
698.	Store/handle radioisotopes safely.	36	80	20	0	40	60	20	0	80
699.	Safely dispose of radioactive wastes.	*								
700.	Inventory radiopharmaceuticals and materials.	36	80	20	20	40	40	0	60	40
702.	Clean, sharpen and maintain instruments/equipment as required.	21	100	0	0	33	67	0	33	67
704.	Maintain unexposed radiographic film storage.	79	82	18	91	0	9	9	27	64
705.	Establish and maintain chain of antisepsis.	*								
706.	Prepare instruments for sterilization (chemical, autoclaving, dry heat).	50	100	0	66	17	17	0	43	57

	Competency	Practice Rate	Type		Use Frequency			Training Needed		
			S	U	D	W	M	I	D	E
708.	Inspect all areas and rooms for proper housekeeping, temperature, and adequate supplies.	36	80	20	100	0	0	0	20	80
711.	Check and record temperatures of appliances/ equipment.	*								
713.	Check invoices against purchase orders.	*								
714.	Organize storage areas for equipment, supplies, drugs.	21	100	0	0	0	100	0	0	100
715.	Evaluate the effectiveness of sanitizing chemicals and sprays used.	20	100	0	100	0	0	0	100	0
716.	Schedule regular checks for radiation leakage.	29	25	75	0	0	100	75	0	25
717.	Check radiation monitoring badges.	70	71	29	0	0	100	50	50	0
718.	Evaluate and select odor controlling aerosols.	*								
719.	Follow procedures for control and security of medical supplies, drugs, equipment.	50	60	40	100	0	0	33	33	33